



Terms and Conditions and Standard User License Agreement - Download Documents

Copyright: This Document is copyrighted. No rights therein are granted except as set forth in this License. Any copying, transmission, modification or reproduction of the copyrighted material, in part or in whole, except as herein permitted is cause for revocation of this License.

License: SAE International hereby grants you a nonexclusive, nontransferable right to download this document in an electronic format for your individual use on one computer. One copy of the document can be printed for individual use. The document may not be copied in any form for distribution to other users or other computers.

NOTICE: SAE International prohibits the entry of its Standards and related Documents into any form of Artificial Intelligence (AI) tools and further prohibits creating derivatives of such SAE content using AI without express written permission from SAE International.

General: Documents that have been successfully downloaded cannot be returned for refund or credit. This Agreement is the complete and exclusive statement of the agreement between you and SAE International and supersedes any and all prior agreements or understandings, either written or oral, concerning the subject of this Agreement. Any modifications must be in writing and signed by the parties.

Notice to Resellers: Authorized resellers of SAE International documents may download documents on behalf of their customers and forward them directly, unopened, to their customers. Resellers may not otherwise copy, transmit, modify or reproduce documents they download from SAE International.

This License shall terminate upon violation of any of its terms.

YOU ACKNOWLEDGE THAT YOU HAVE READ THIS LICENSE AGREEMENT, UNDERSTAND IT AND AGREE TO BE BOUND BY THE TERMS AND CONDITIONS THEREOF.

SAE has provided view-only access to United Nations WP.29 GRE for review/reference purposes only. This document is SAE copyrighted intellectual property. It may not be shared, downloaded, duplicated, reprinted, or transmitted in any manner without prior written permission from SAE. SAE requires that you make best efforts to secure and protect the document from disclosure, taking at least the same care that you would for your own confidential information. Thank you.



SURFACE VEHICLE RECOMMENDED PRACTICE	J3134™	DEC2025
	Issued	2019-05
	Revised	2025-12
Superseding J3134 MAY2019		
(R) Automated Driving System (ADS) Marker Lamp		

RATIONALE

The current SAE J3134 standard only has requirements for front Automated Driving System (ADS) marker lamps because the initial justification was to make the road user comfortable when a driver is not present. Since then, there have been requests to add rear and side marker ADS lamps requirements into SAE J3134 for the following reasons:

- Rear and side ADS marker lamps are being considered in the UNECE and China regulations.
- SAE J3134 rear and side ADS requirements would establish a recommended practice that could lead to harmonization as it did with front ADS marker lamps.
- Rear and side ADS marker lamps are being installed and studied on vehicle test fleets.
- State Law Enforcement are supportive of 360-degree visibility, e.g., front, rear, and side ADS marker lamps.
- California Bill - CA SB 480 – proposes: (j) Commencing January 1, 2026, an autonomous vehicle may be equipped with automated driving system (ADS) marker lamps in accordance with SAE International’s “Recommended Practice, Automated Driving System (ADS) Marker Lamp, Standard J3134 (May2019),” as may be revised...
- American Association of Motor Vehicle Administrators (AAMVA) has also included ADS Marker Lamps in their *Guidelines for Regulating Vehicles with Autonomous Driving Systems* - Chapter 6. Law Enforcement Considerations - 6.1 Vehicle Identification:

Recommendations for Jurisdictions:

6.1.2. Encourage the passage of legislation...to allow Manufacturers and Other Entities (MOEs) to implement the use of ADS marking lamps for...ADS vehicles. The color should comply with SAE J3134.

Recommendation for MOEs:

“MOE 26. When authorized to do so, install ADS marking lamps to allow law enforcement to identify if an ADS-equipped vehicle is being operated by the ADS or by the driver to mitigate enforcement stops for driver-centric violations, such as distracted driving. Visual or other cues should be included in the law enforcement interaction plan.”

SAE Executive Standards Committee Rules provide that: “This report is published by SAE to advance the state of technical and engineering sciences. The use of this report is entirely voluntary, and its applicability and suitability for any particular use, including any patent infringement arising therefrom, is the sole responsibility of the user.”

SAE reviews each technical report at least every five years at which time it may be revised, reaffirmed, stabilized, or cancelled. SAE invites your written comments and suggestions.

Copyright © 2025 SAE International

All rights reserved. No part of this publication may be reproduced, stored in a retrieval system, transmitted, in any form or by any means, electronic, mechanical, photocopying, recording, or otherwise, or used for text and data mining, AI training, or similar technologies, without the prior written permission of SAE.

TO PLACE A DOCUMENT ORDER: Tel: **1-877-606-7323 (U.S. and Canada only)**
 Tel: **1-724-776-4970 (outside U.S. and Canada)**
 Fax: **724-776-0790**
 Email: **CustomerService@sae.org**
SAE WEB ADDRESS: **http://www.sae.org**

For more information on this standard, visit
https://www.sae.org/standards/content/J3134_202512/

In 2.2.1 (SAE Publications):

Added SAE J2042

Removed SAE J2442

Added SAE J3098

In 2.2.2 (Other Publications):

Added American Association of Motor Vehicle Administrations (AAMVA) - *Guidelines for Regulating Vehicles with Automated Driving Systems Edition 4*

In Section 3 (Definitions):

3.1 AUTOMATED DRIVING SYSTEM (ADS) - definition revised

3.2 ADS MARKER LIGHT FUNCTION - definition and title revised

3.3 ADS MARKER LAMP - new definition added

In 6.1.5 (Photometry):

Revised ADS marker lamp requirements:

- Changed front ADS marker lamp photometry points to harmonize with UN signal lamp photometry points.
- Combined day and nighttime requirements into one figure to simplify document.
- Added sections 6.1.5.2 and 6.1.5.3 and figures for rear and side ADS marker lamp requirements.

In 6.2 (Visibility):

Added geometric visibility requirements.

In 6.3 (Color):

Removed specific blue-green color coordinates and referenced SAE J578 in 6.3.1.

In 6.5 (Installation):

Revised Table 2 to include rear and side ADS marker lamps requirements. Allowing deactivation of ADS marker lamps either automatically (GPS) or by other means (dealer service procedure) for areas or jurisdictions where ADS marker lamps are potentially prohibited.

1. SCOPE

This SAE Recommended Practice provides guidelines for the use, performance, installation, activation, and switching of marking lamps on Automated Driving System (ADS) equipped vehicles.

2. REFERENCES

2.1 Applicable Documents

The following publications form a part of this specification to the extent specified herein. Unless otherwise indicated, the latest issue of SAE publications shall apply.

2.1.1 SAE Publications

Available from SAE International, 400 Commonwealth Drive, Warrendale, PA 15096-0001, Tel: 1-877-606-7323 (U.S. and Canada only) or 1-724-776-4970 (outside U.S. and Canada), www.sae.org.

SAE J575	Test Methods and Equipment for Lighting Devices for Use on Vehicles Less than 2032 mm in Overall Width
SAE J576	Plastic Material or Materials for Use in Optical Parts Such as Lenses and Reflex Reflectors of Motor Vehicle Lighting Devices
SAE J578	Chromaticity Requirements for Ground Vehicle Lamps and Lighting Equipment
SAE J759	Lighting Identification Code
SAE J3016	Taxonomy and Definitions for Terms Related to Driving Automation Systems for On-Road Motor Vehicles

2.1.2 CIE Publications

Available from CIE Central Bureau, Babenbergerstrasse 9/9A, 1010 Vienna, Austria, Tel: +43 1 714 31 87, www.cie.co.at.

CIE 1931	Standard - Colorimetry
----------	------------------------

2.2 Related Publications

The following publications are provided for information purposes only and are not a required part of this SAE Technical Report.

2.2.1 SAE Publications

Available from SAE International, 400 Commonwealth Drive, Warrendale, PA 15096-0001, Tel: 1-877-606-7323 (U.S. and Canada only) or 1-724-776-4970 (outside U.S. and Canada), www.sae.org.

SAE J387	Terminology - Motor Vehicle Lighting
SAE J1889	LED Signal and Marking Lighting Devices
SAE J2042	Clearance, Sidemarkers, and Identification Lamps for On-Road Vehicles 2032 mm or More in Overall Width
SAE J2139	Tests for Signal and Marking Devices Used on Vehicles 2032 mm or More in Overall Width
SAE J3098	Front Decorative Lamp
SAE J3114	Human Factors Definitions for Automated Driving and Related Research Topics

2.2.2 Other Publications

Automated Driving Systems 2.0 - A Vision For Safety. Available at <https://www.nhtsa.gov>.

Lagström, T., and Lundgren, V.M. (2015). *AVIP, Autonomous Vehicles Interaction with Pedestrians - An Investigation of Pedestrian-Driver Communication and Development of a Vehicle External Interface*. Chalmers University of Technology, Gothenburg, Sweden. Available at <http://publications.lib.chalmers.se/records/fulltext/238401/238401.pdf>.

Rothenbücher, D., Li, J., Sirkin, D., Mok, B., and Ju, W. (2016). *Ghost Driver: A Field Study Investigating the Interaction Between Pedestrians and Driverless Vehicles*. 25th IEEE International Symposium on Robot and Human Interactive Communication. Available at <http://www.wendyju.com/publications/RO-MAN2016-Rothenbuecher.pdf>.

Merat, N., Madigan, R., Louw, T., Dziennus, M., and Schieben, A. (2016). *What do Vulnerable Road Users think about ARTS?* CityMobil2 Final Conference, Donostia-San Sebastian, Spain.

Available at <https://cordis.europa.eu/docs/results/314/314190/final1-final-publishable-report.pdf>.

Carlsson, M., Eklund, K., and Nilsson, P. *Who Sees You When the Car Drives Itself?* Semcon. Available at <https://semcon.com/smilingcar/>.

UNECE GRE Task Force Autonomous Vehicle Signalling Requirements (AVSR). *Taskforce Autonomous Vehicle Signalling Requirements*. Available at <http://www.unece.org>.

American Association of Motor Vehicle Administrations (AAMVA). *Guidelines for Regulating Vehicles with Automated Driving Systems Edition 4*. Available at

https://www.aamva.org/getmedia/c95fd480-5917-471a-b7ee-da88ec6cb7b5/Guidelines-for-Regulating-Vehicles-with-Automated-Driving-Systems-Ed-4_final.pdf.

3. DEFINITIONS

3.1 AUTOMATED DRIVING SYSTEM (ADS)

Hardware and software collectively capable of performing dynamic driving tasks; specifically, a Level 3, 4, or 5 driving automation system as defined in SAE J3016.

SAE J3016 “describes [motor] vehicle driving automation systems that perform part or all of the dynamic driving task (DDT) on a sustained basis. It provides a taxonomy with detailed definitions for six levels of driving automation, ranging from no driving automation (Level 0) to full driving automation (Level 5)...”

Level 0: No Driving Automation

Level 1: Driver Assistance

Level 2: Partial Driving Automation

Level 3: Conditional Driving Automation

Level 4: High Driving Automation

Level 5: Full Driving Automation

SAE J3016 defines an automated driving system (ADS) as a Level 3, 4, or 5 driving automation system.

3.2 ADS MARKER LIGHT FUNCTION

A light signal to indicate when a vehicle's ADS is engaged in the operation of the vehicle.

3.3 ADS MARKER LAMP

A device providing the ADS marker light function.

3.4 DAYTIME

When exterior ambient light conditions do not warrant the use of headlamps.

3.5 NIGHTTIME

When exterior ambient light conditions warrant the use of headlamps.

4. LIGHTING IDENTIFICATION CODE

ADS marker lamps may be identified by the following lighting identification codes:

AMF – ADS marker front lamp

AMS – ADS marker side lamp

AMR – ADS marker rear lamp

5. TESTS

5.1 SAE J575 is a part of this document. The following tests are applicable with the modifications as indicated.

5.1.1 Vibration Test

5.1.2 Moisture Test

5.1.3 Dust Test

5.1.4 Corrosion Test

5.1.5 Photometry Test

5.1.6 Warpage Test for Devices with Plastic Components

5.2 Visibility

5.3 Color Test

SAE J578 is a part of this document.

5.4 Materials

SAE J576 is a part of this document.

6. REQUIREMENTS

6.1 Performance Requirements

A device, when tested in accordance with the test procedures specified in Section 5, shall meet the following requirements per SAE J575, with the modifications indicated:

6.1.1 Vibration

6.1.2 Moisture

Does not apply to any lamps mounted inside the vehicle.

6.1.3 Dust

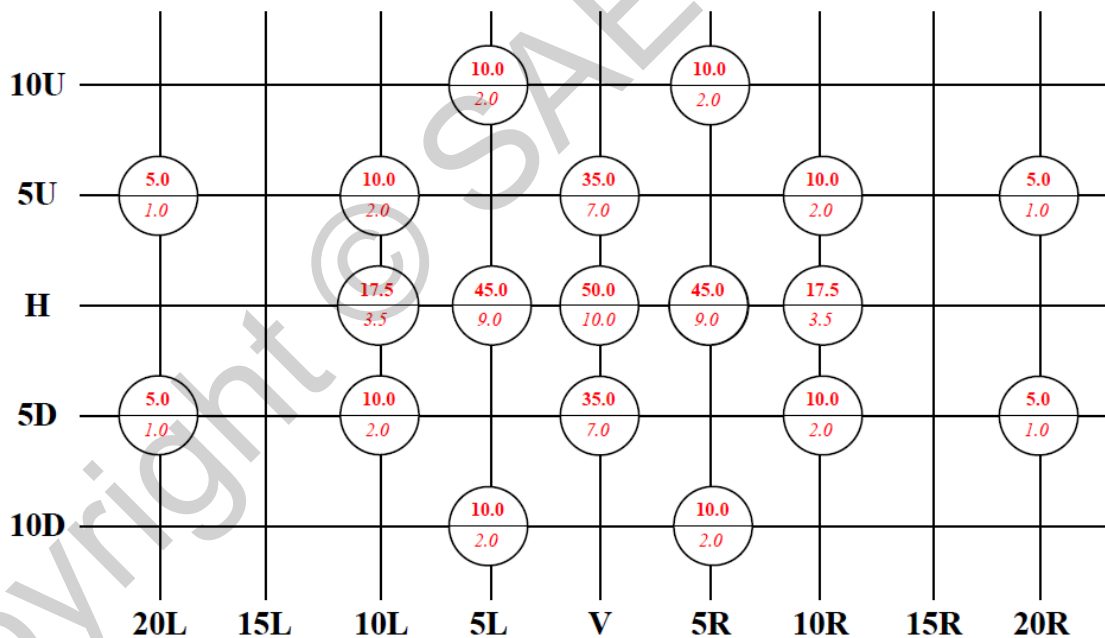
Does not apply to any lamps mounted inside the vehicle.

6.1.4 Corrosion

Does not apply to any lamps mounted inside the vehicle.

6.1.5 Photometry

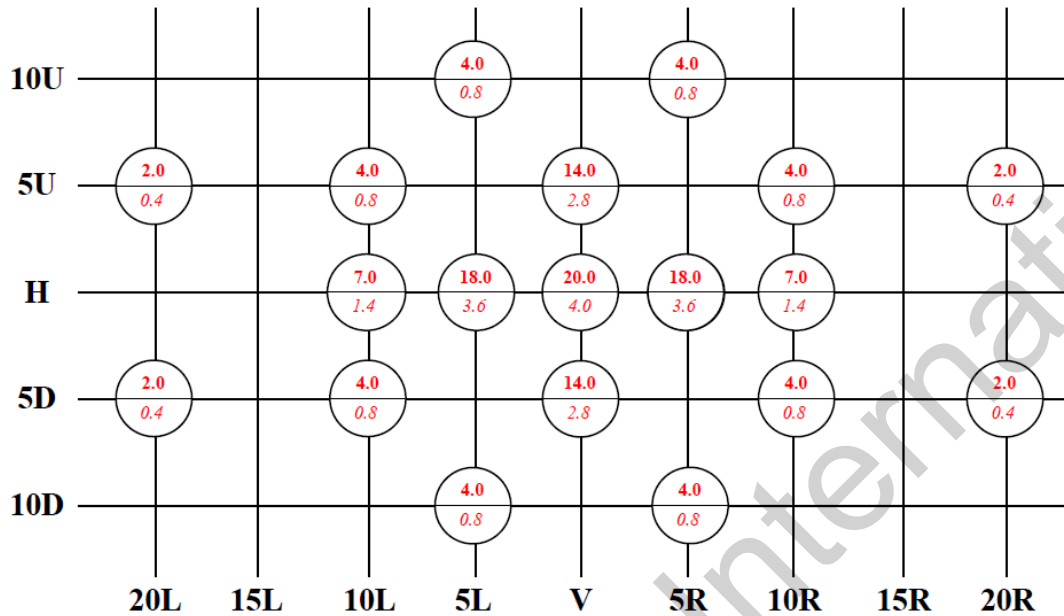
6.1.5.1 Each front ADS marker lamp shall meet the daytime and nighttime minimum photometry requirements specified in Figure 1.



1. Top number is minimum daytime intensity and bottom number is minimum nighttime intensity.
2. Maximum daytime intensity is 300 cd.
3. Maximum nighttime intensity is 125 cd.
4. The photometric intensity values between test points must not be less than the lower specified minimum value of the two closest adjacent test points on a horizontal or vertical line.
5. Values at 10 degrees down must be met only for mounting heights above 750 mm.

Figure 1 - Front ADS marker lamp photometry requirements
Minimum luminous intensity (cd)

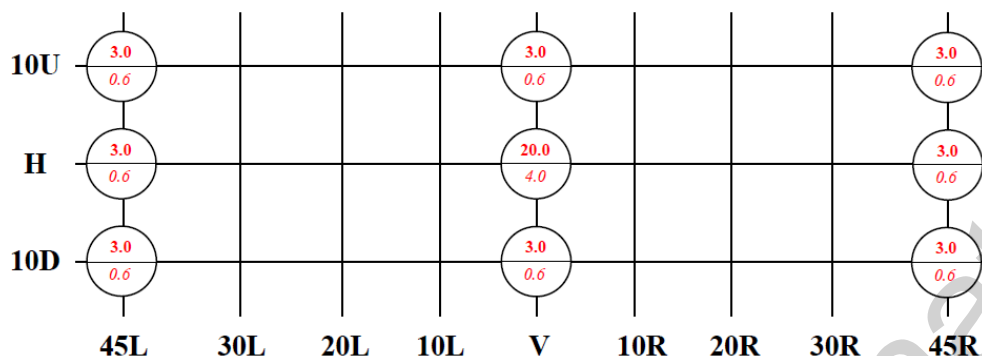
6.1.5.2 Each rear ADS marker lamp shall meet the daytime and nighttime minimum photometry requirements specified in Figure 2.



1. Top number is minimum daytime intensity and bottom number is minimum nighttime intensity.
2. Maximum daytime intensity is 120 cd.
3. Maximum nighttime intensity is 42 cd.
4. The photometric intensity values between test points must not be less than the lower specified minimum value of the two closest adjacent test points on a horizontal or vertical line.
5. Values at 10 degrees down must be met only for mounting heights above 750 mm.

Figure 2 - Rear ADS marker lamp photometry requirements
Minimum luminous intensity (cd)

6.1.5.3 Each side ADS marker lamp shall meet the daytime and nighttime minimum photometry requirements specified in Figure 3.



1. Top number is minimum daytime intensity and bottom number is minimum nighttime intensity.
2. Maximum daytime intensity is 120 cd.
3. Maximum nighttime intensity is 25 cd.
4. The photometric intensity values between test points must not be less than the lower specified minimum value of the two closest adjacent test points on a horizontal or vertical line.
5. Values at 10 degrees down must be met only for mounting heights above 750 mm.

Figure 3 - Side ADS marker lamp photometry requirements

Minimum luminous intensity (cd)

6.1.5.4 If the front ADS marker lamp(s) is mounted within 100 mm from the lighted edge of a headlamp or fog lamp, the minimum luminous nighttime intensity values at all test points shown in Figure 1 shall be multiplied at least 2.5 times. The nighttime maximum luminous intensity value shall also be increased by 2.5 times.

6.1.5.5 If the ADS marker lamp(s) is mounted within 100 mm from the lighted edge of a DRL, the minimum luminous daytime intensity values at all test points shown in Figure 1 shall be multiplied at least 2.5 times. The daytime maximum luminous intensity value shall also be increased by 2.5 times.

6.1.5.6 The lamps shall be designed to comply to photometry requirements as installed on the vehicle, with all vehicular obstructions considered (e.g., vehicle glazing for interior-mounted lamps).

6.1.6 Warpage

6.2 Visibility

ADS marker lamps shall meet a minimum daytime luminous intensity of 0.3 cd and minimum nighttime luminous intensity of 0.05 cd within the geometric visibility angles specified in Table 1.

Table 1 - ADS marker lamp visibility

Lighting Device	Quantity	Visibility Angles
Front ADS Marker Lamp(s)	1	60 degrees outboard to 60 degrees inboard 15 degrees up to 15 degrees down
	2	60 degrees outboard to 45 degrees inboard 15 degrees up to 15 degrees down
Rear ADS Marker Lamp(s)	1	60 degrees outboard to 60 degrees inboard 15 degrees up to 15 degrees down
	2	60 degrees outboard to 45 degrees inboard 15 degrees up to 15 degrees down
Side ADS Marker Lamp(s)	n/a	n/a

Note: Where a lamp is mounted with its axis of reference less than 750 mm above the road surface, the vertical test point angles located below the horizontal plane subject to visibility requirements may be reduced to 5 degrees down.

6.3 Color

6.3.1 The color of light emitted from the ADS marker lamp shall be blue green per SAE J578. The light color specification shall be met with all vehicular obstructions considered (e.g., vehicle glazing for interior-mounted lamps).

6.4 Materials

Plastic materials used in the optical parts shall meet the requirements per SAE J576.

6.5 Installation

ADS marker lamps shall be installed in accordance with Table 2.

Table 2 - ADS marker lamp installation

Lighting Device	Number	Mounting Location	Mounting Height	Device Activation
Front ADS Marker Lamp(s)	1 or 2	Facing forward Qty 1 - the lamp center on the vertical centerline Qty 2 - symmetrically about the vertical centerline	Center of lamp not less than 380 mm from ground (No max height)	<ol style="list-style-type: none"> Steady burning. Must only be activated while the vehicle ADS is engaged and actively controlling driving functions of the vehicle or when the vehicle is operated by a remote driver (as defined in SAE J3016). May be deactivated if optically combined with a required signal function. For example, when optically combined with a turn signal, the circuit may be such that the ADS marker signal cannot be activated if the turn signal lamp is flashing. All ADS marker lamps must switch ON and OFF simultaneously Must not be switched ON or OFF manually by the vehicle operator In areas where ADS marker lamps are prohibited, these lamps must be automatically disabled based on GPS or by other means not readily available to the vehicle operator.
Rear ADS Marker Lamp(s)	1 or 2	Facing rearward Qty 1 - the lamp center on the vertical centerline Qty 2 - symmetrically about the vertical centerline		
Side ADS Marker Lamp(s)	1 or 2	Facing sideways 1 or 2 on each side of the vehicle		

7. GUIDELINES

The following guidelines apply to the devices as used on the vehicle but are not to be considered part of the requirements.

- 7.1 Lamps inside the vehicle should be configured and mounted so as to minimize leakage and reflections of their light which might be visible to the driver, directly or via the rearview mirror.
- 7.2 Installation, connection, and operability of ADS marker lamps should be evaluated for compliance with applicable laws or regulations in the jurisdiction where the vehicle is to be sold or used.

8. NOTES

8.1 Revision Indicator

A change bar (I) located in the left margin is for the convenience of the user in locating areas where technical revisions, not editorial changes, have been made to the previous issue of this document. An (R) symbol to the left of the document title indicates a complete revision of the document, including technical revisions. Change bars and (R) are not used in original publications, nor in documents that contain editorial changes only.

PREPARED BY SAE SIGNALING AND MARKING DEVICES STANDARDS COMMITTEE OF
THE SAE LIGHTING SYSTEMS STEERING COMMITTEE